

-13-

CLAIMS

1. An electrical connector assembly for a medical device comprising:
an elastomeric element defining a hole to receive a portion of a medical lead; and
a conductive element conforming to an end of the elastomeric element such that, upon insertion of the medical lead through the hole, the conductive element electrically couples to an electrical contact element of the medical lead.
2. The electrical connector assembly of claim 1, wherein the elastomeric element is formed with a seal ring inside the hole to bias against an inserted lead.
3. The electrical connector assembly of claim 1, wherein the conductive element comprises a conductive ring with tab-like elements extending radially inward from the ring, wherein the conductive ring fits about the end of the electrometric element and the tab-like elements are bent to conform to an inner surface of the hole.
4. The electrical connector assembly of claim 3, wherein distal tips of the tab-like elements are bent toward the elastomeric element such that the tab-like elements form J-like shapes.
5. The electrical connector assembly of claim 1, wherein upon insertion of the medical lead through the hole, the elastomeric element biases the conductive element against the medical lead.
6. A connector module for an implantable medical device comprising:
a structure formed with a channel to receive a medical lead, the structure defining an access hole to the channel; and

an electrical connector assembly positioned in the channel, the electrical connector assembly including an elastomeric element defining a hole to receive a portion of a medical lead, and a conductive element conforming to an end of the elastomeric element such that upon insertion of the medical lead through the hole, the conductive element electrically couples to an electrical contact element of the medical lead.

7. The connector module of claim 6, wherein the elastomeric element is formed with a seal ring inside the hole to bias against the medical lead following insertion of the medical lead through the hole.

8. The connector module of claim 6, wherein the conductive element comprises a conductive ring with tab-like elements extending radially inward from the ring, wherein the conductive ring fits about the end of the elastometric element and the tab-like elements are bent to conform to an inner surface of the hole.

9. The connector module of claim 8, wherein distal tips of the tab-like elements are bent towards the elastomeric element such that the tab-like elements form J-like shapes.

10. The connector module of claim 6, wherein upon insertion of the medical lead through the hole, the elastomeric element biases the conductive element against the medical lead.

11. The connector module of claim 6, further comprising:
a plurality of access holes to the channel; and
a plurality of electrical connector assemblies positioned in the channel, wherein following insertion of the medical lead a plurality of in-line electrical contacts of the medical lead electrically couple respectively to the plurality of electrical connector assemblies.

-15-

12. The connector module of claim 11, wherein the connector module conforms to an IS-4 connector standard for implantable medical devices.
13. An implantable medical device comprising:
 - a housing;
 - circuitry within the housing;
 - a connector module connected to the housing and including a structure formed with a channel and defining an access hole to the channel;
 - a medical lead in the channel; and
 - an electrical connector assembly positioned in the channel, the electrical connector assembly including an elastomeric element defining a hole to receive a portion of a medical lead, and a conductive element conforming to an end of the elastomeric element such that upon insertion of the medical lead through the hole, the conductive element electrically couples to an electrical contact element of the medical lead.
14. The implantable medical device of claim 13, wherein the elastomeric element is formed with a seal ring inside the hole to bias against the medical lead following insertion of the medical lead through the hole.
15. The implantable medical device of claim 13, wherein the conductive element comprises a conductive ring with tab-like elements extending radially inward from the ring, wherein the conductive ring fits about the end of the elastomeric element and the tab-like elements are bent to conform to an inner surface of the hole.
16. The implantable medical device of claim 15, wherein distal tips of the tab-like elements are bent towards the elastomeric element such that the tab-like elements form J-like shapes.

-16-

17. The implantable medical device of claim 13, wherein upon insertion of the medical lead through the hole, the elastomeric element biases the conductive element against the medical lead.

18. The implantable medical device of claim 13, the connector module further comprising a plurality of access holes to the channel, and a plurality of electrical connector assemblies positioned in the channel, wherein following insertion of the medical lead a plurality of in-line electrical contacts of the medical lead electrically couple respectively to the plurality of electrical connector assemblies.

19. The implantable medical device of claim 17, wherein the medical lead and the connector module conform to an IS-4 connector standard for implantable medical devices.

20. A method comprising:
forming a conductive element;
forming an elastomeric element to include a seal ring inside a hole; and
assembling the conductive element to an end of the elastomeric element to form electrical connector assembly with an integrated seal.

21. The method of claim 20, further comprising:
forming the conductive element as a conductive ring with tab-like elements extending radially inward from the ring; and
assembling the conductive element to the end of the elastomeric element bending the tab-like elements to conform to an inner surface defined by the hole.

22. The method of claim 21, further comprising bending distal tips of the tab-like elements towards the elastomeric element such that the tab-like elements form J-like shapes that conform to the hole.